

STATUS AND DISTRIBUTION OF A NEWLY DOCUMENTED RESIDENTIAL GANGETIC DOLPHIN (*PLATANISTA GANGETICA* ROXBURGH 1801) POPULATION IN EASTERN ASSAM¹

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Among the four freshwater species of dolphin, the Gangetic Dolphin (*Platanista gangetica*) is found in the Ganga and Brahmaputra drainage systems of India. At present, *P. gangetica* is considered a highly endangered mammal in India and is strictly protected under the Wildlife (Protection) Act, 1972 as a Schedule I species. This species was once common in the Brahmaputra river system, but due to various natural and anthropogenic pressures, its population is decreasing rapidly, resulting in the disappearance of most of the residential dolphin populations, especially from eastern Assam. In this critical situation, a residential dolphin population has recently been identified downstream of Lohit river. An extensive effort has been made to investigate the population status and distribution pattern of this dolphin population. The present communication is a result of that effort.

Key words: *Platanista gangetica*, status, distribution, population, Brahmaputra, conservation

INTRODUCTION

There are only four species of freshwater dolphins in the world. Among them, Buoto (*Inia geoffrensis*) is found in South America, Baiji (*Lipotes vexillifer*) in the Yangtze river system of China, Bhulan (*Platanista minor*) in Pakistan and Gangetic Dolphin (*Platanista gangetica*) in the Ganga-Brahmaputra-Meghna and Karnapuli river systems of India, Bangladesh and Nepal (Anderson 1878; Kasua and Haque 1972; Jones 1982; Mohan 1989; Reeves and Brownell 1989; Shrestha 1989; Reeves *et al.* 1993).

The distributional range and numbers of the Gangetic Dolphin have been declining in many areas (Reeves and Leatherwood 1995) and the IUCN revised its threatened status from Vulnerable (Klinowska 1991) to Endangered (IUCN 1996).

Some studies have been undertaken to determine the status and distribution of *Platanista gangetica* in Brahmaputra river (Biswas *et al.* 1997; Mohan *et al.* 1997; Biswas and Baruah 2000). But information on its conservation status in the tributaries of Brahmaputra is very poor. No intensive study has been undertaken in these tributaries (which once provided good habitats for the Gangetic Dolphin), except Mohan *et al.* (1998) on the Kulsi river of middle Assam. During our study, we investigated new dolphin habitats in a few tributaries in eastern Assam, and found that a dolphin population exists downstream of Lohit river throughout the year. An effort has been made to determine the status and distribution of this population.

STUDY AREA

The study was carried out in 2000-2002, downstream of Lohit river, which originates from the Yoku peak (6,614 m above msl) of China (Sarma 1993). After flowing c. 350 km, Lohit

enters Assam (Sarma 1993) and becomes an important tributary of River Brahmaputra. River Lohit started changing channels due to frequent floods in the Dibang river, another major tributary of River Brahmaputra, in 1985-1986; within ten years, by 1995-96, the Lohit started flowing down from Saikhowaghat, through the southern boundary of the Dibru-Saikhowa National Park, engulfing Dangori and Dibru rivers, finally joining Brahmaputra at Balijan.

The study was carried out downstream of Lohit river from Saikhowaghat (27° 47' N, 95° 40' E) to Balijan (27° 34' N, 95° 10' E), a stretch of 60 km (Fig. 1).

METHODOLOGY

At the beginning of this study, we collected secondary information on the dolphin's existence (throughout the year), in the major tributaries of River Brahmaputra in eastern Assam. We targeted the local fishermen and villagers for this information. The information so collected revealed the existence of dolphins downstream of Lohit River throughout the year.

Surveys were conducted upstream and downstream of the River on a country boat, with local boatmen as field guides. I covered 20 km of the river in a single day during the downstream journey and 15 km during the upstream journey, spending maximum time in dolphin surfacing areas. The survey took three days for downstream and four days for upstream observations. A direct-count method (Perrin and Brownell 1989) was followed during the survey. After confirming the existence of dolphins, one continuous survey was made from upstream to downstream and vice versa in a motorboat of low sound emission, at an optimum speed (8-9 km/hr). During this survey, three observers sat at the front of the boat. One was a secondary observer and the data collector, while the other

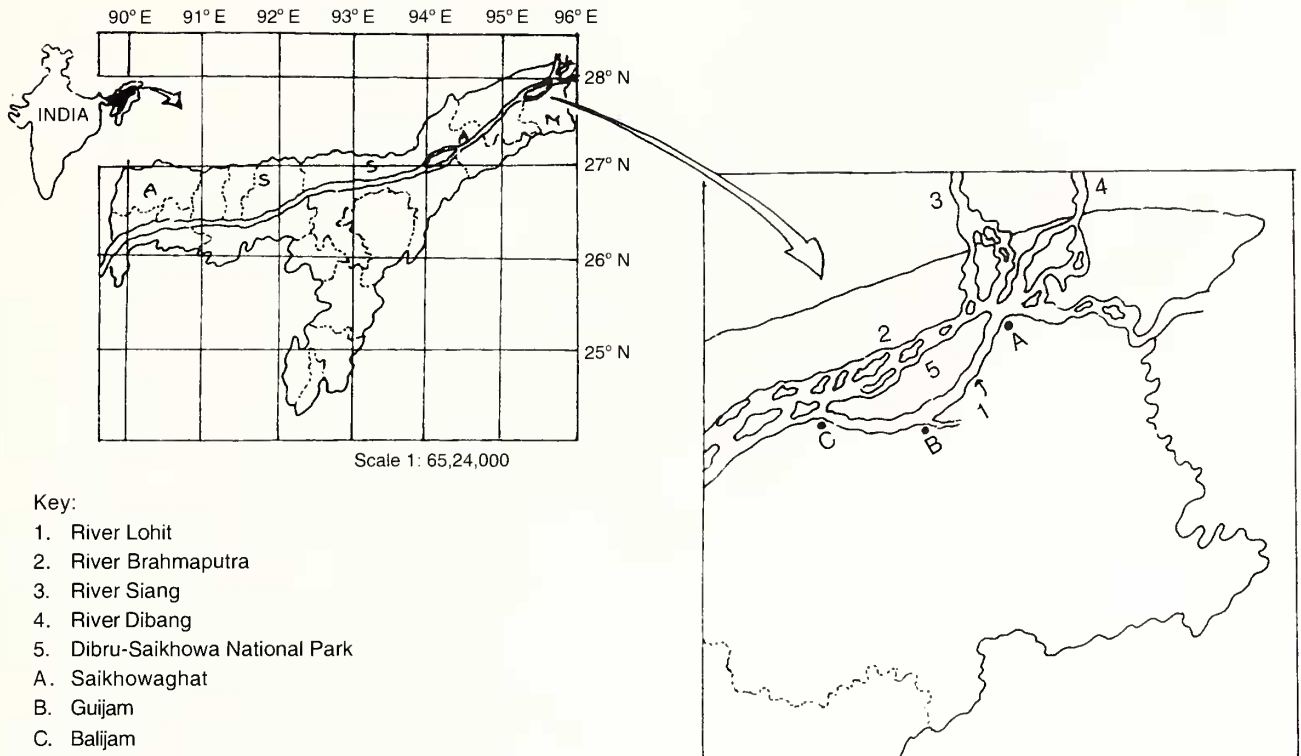


Fig. 1: Map showing the location of Lohit River

two, on either side of him, were primary observers. The maximum, minimum and best count method was followed for a fairly accurate estimation of the population. Maximum and minimum counts indicate the maximum and minimum possibilities of dolphin occurrence in a particular river stretch, while the best counts indicate the optimum occurrence of dolphins. A standard datasheet was used to record the dolphin sightings, habitat status and anthropogenic pressures. A GPS instrument was used at one kilometre intervals to collect data on coordinates. Altogether five surveys (three by row boat and two by motor boat) were made within the study period in the Lohit river.

RESULTS

Population status and distribution of dolphins in Lohit river

During this two year survey, altogether 14 (maximum 16, minimum 13, best 14) dolphins (group size 1-3) were observed in the stretch of River Lohit from Saikhowaghat to Balijan. These dolphins were observed at different locations as different groups in the Lohit river (Table 1), identified only in the winter. During summer, especially during the high flood season, the groups were hardly observed in these locations; most of them were traced in the streams of the Dibru-Saikhowa National Park, which join the Lohit river.

The encounter rate of dolphins in Lohit river was estimated to be 0.23 individuals per km. However, differences

in density and distribution were observed in different stretches of the Lohit river. The encounter rate was higher (0.26 individual per km) between Saikhowa and Guijam ($27^{\circ} 34' N$, $95^{\circ} 19' E$) than between Guijam and Balijan (0.16 individual per km). Guijam was found to be a demarcating line between these two river stretches, as there was frequent motorboat crossing here (two motor boats per hour). While determining the rate of anthropogenic disturbances, it was found that the Lohit river between Saikhowa and Guijam had less fishing activity (2.14 gill nets per km) than between Guijam and Balijan (5.22 gill nets per km). Also, the intensity of traffic between Saikhowa and Guijam (0.07 motorboat per km) was less than between Guijam and Balijan (0.55 motorboats per km).

Age group

During the study period, one calf each was observed in Dighaltarang and Memdubi. Three subadults were observed, one each in Hatighuli, Memdubi and Balijan. Altogether nine adults were observed in the entire stretch, one each in Hatighuli, Laina and Memdubi, and two each in Doijan, Balijan and Dighaltarang (Table 1). The age class analysis of the dolphins of Lohit river is presented in Fig. 2.

Habitat use

During the survey period, the dolphins were observed in different habitats. Most of the dolphins (43%) were seen in the river confluences (Memdubi and Balijan), followed by

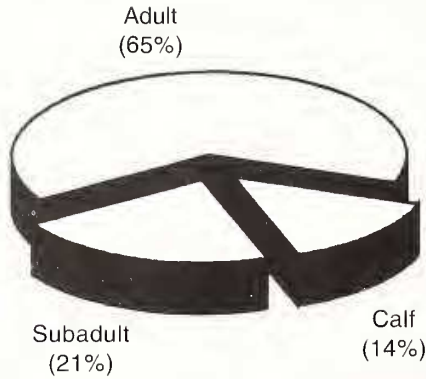


Fig. 2: Age class analysis of dolphins in Lohit River

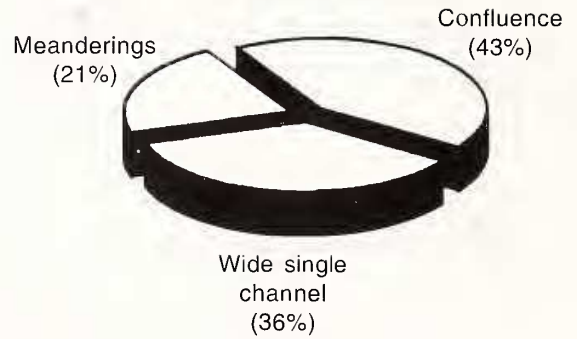


Fig. 3: Habitat use by the dolphins in Lohit River

wide single channel (> 300 m) in the Lohit river. The results are presented in Fig. 3.

DISCUSSION

The distribution of dolphins in Lohit river is seasonal. During the investigations, the above mentioned dolphin groups in Lohit river were seen only during winter (November-March). From April, monsoon precipitation leads to an increase in the water level of Lohit river. As a result, the dolphins are found scattered in the river. During July-August, the area experiences high flooding due to heavy rainfall. At that time, the dolphins migrate locally to the perennial streams (Kolomi, Ajuka, Hamukjan, Laikajan, Dodhiajan etc.), seasonal streams (Garamjan, Erasuti etc.) and wetlands (Tarali, Sal, Burhibeel etc.) of the Dibru-Saikhowa National Park, as well as to other parts of the Lohit river. From the last week of September, the water level in these water bodies starts shrinking, and by October the Lohit river and the locations mentioned on Lohit river (Table 1), are the only deep water bodies in the area. These become the ultimate shelter for the dolphins of Lohit river.

An interesting aspect of this dolphin population is that they are comparatively newcomers to this stretch of Lohit

river. Before 1995-96, they were commonly seen in this area during high flood season. At that time, they migrated during flood seasons from the Brahmaputra river to the Dangori river which would have high levels of water owing to flood. But due to changing of channels, the Lohit River started flowing through the Ananta nallah and Dangori river. This resulted in the widening of Dangori and Dibru rivers at least three times (pers. comm., local villagers). The seasonally sighted dolphins started to live in that stretch of Lohit river from 1995-96 and in the last seven years they have become residents.

The dolphin population of Lohit river is now facing serious problems, the major threat being fishing. About thirty fringe villages with a population of 25,000-30,000 live on the left bank of the Lohit river. Of these, about 30% are dependent on fishing, and for them this stretch of Lohit river is an important fishing ground. These fishermen employ different fishing gear in the river, including the most dangerous gill-net fishing. During the study period, an average of 2.9 gill-net fishing per km was observed. This heavy fishing leads to accidental dolphin killing. In the last two years, there were four dolphin deaths in the river, of which three were accidental from gill-net fishing. On the other hand, round-the-clock fishing and fish poisoning (especially in the Taralimukh area) are also serious threats to the food sources of these dolphins.

Though dolphin poaching is not so prominent in this river stretch, one dolphin was killed in the Dighaltarang area in November, 2001.

Table 1: Distribution of dolphins in Lohit river

Sighting area	Sighting location	No. of dolphins		
		Max.	Min.	Best
Hatighuli	27° 45' N, 95° 33' E	2	2	2
Laina	27° 41' N, 95° 30' E	1	1	1
Doijan	27° 39' N, 95° 26' E	3	2	2
Dighaltarang	27° 36' N, 95° 24' E	3	3	3
Memdubi	27° 34' N, 95° 20' E	4	3	3
Balijan	27° 34' N, 95° 11' E	3	2	3
Total		16	13	14

CONCLUSION

At present, the status of freshwater dolphin in India has been considered critical due to a steep decrease in their population; hence they are protected under the Wildlife (Protection) Act, 1972 as a Schedule I species. Protection of the dolphin population of Lohit river should be the topmost

priority of concerned management bodies, as well as locals for ecological equilibrium of the region. For effective conservation, the following measures are suggested, based on my experience in this region.

- a. Fishing control: Use of small mesh cast nets, gill nets, using of pesticides and round-the-clock fishing should be strictly banned in the Lohit river.
- b. Fishing free zone: Hatighuli, Laina, Doijan, Dighaltarang, Memdubi and Balijan should be declared fishing free zones, especially in the winter.
- c. Traditional fishing: The fishermen should be encouraged to use traditional fishing practices, like Jheng fishing in the river stretch from Saikhowa to Balijan of Lohit river for sustainable development of fishery resources for the local communities and the dolphins.
- d. Eco-tourism: As an alternate livelihood for fishermen, eco-tourism (river dolphin viewing) can be encouraged

in Lohit. This will definitely improve the socio-economic conditions of the fringe villagers and encourage them to participate actively in dolphin conservation.

- e. Awareness programme: A long-term and continuous awareness programme for dolphin conservation is the top-most priority in all the fringe villages of Lohit river, without which one can only expect a bleak future for this dolphin population.

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